

## II

# ARTIFICIAL FEVER THERAPY OF SYPHILIS AND GONOCOCCIC INFECTIONS

### DISCUSSION

THE PRESIDENT said Dr. Simpson would know, from the silence and quite evident interest manifested during his address and the applause at the end of it, how very much those present had enjoyed it. The details he gave of the work were of the greatest importance to those engaged in V.D. work. The results shown were most interesting.

Obstinate cases of gonorrhœa were a worry, and cases of neuro-syphilis were difficult. The good results were apt to be forgotten in the tragedies of some of these infected people.

The PRESIDENT invited members to question the Lecturer on any points which occurred to them, in the short time which remained before Dr. Simpson had to leave.

DR. ANWYL-DAVIES said he wished to thank Dr. Simpson for having brought America to the Society. The majority of members have to be content with reading of what goes on in various parts of the world, being too busy to flit across the ocean.

He would not ask Dr. Simpson a large number of technical questions. It was marvellous how much he had been able to crowd into his paper.

He was glad to note that Dr. Simpson had confirmed the speaker's own experiments, namely, that as far as gonorrhœa was concerned, to simply raise the temperature of the local tissues was of little use. The temperature charts exhibited showed that it was essential to raise the temperature of all the tissues to the same degree at the same time.

Nothing, he thought, could speak more clearly than Dr. Simpson's motion picture of the result obtained in the tabo-paretic case. What he had shown was a great triumph, and a splendid illustration of what could be achieved by team work. And it illustrated, too, what

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valuable work could be done by one profession co-operating with another.

He would like to know how much these experiments had cost. For the last six years he had been doing his best to obtain money for research in this country, but, so far, without success.

He also asked how Dr. Simpson's hypertherm apparatus could be obtained. For two years he had spent much time in trying to obtain one.

MR. AMBROSE KING also thanked Dr. Simpson cordially for his interesting paper and expressed his admiration for that gentleman's great pioneer work in this fruitful field of research.

Dr. Simpson had dealt with every aspect of his subject and, owing to the fact that his method had not yet been employed in this country, there was little scope for discussion. His own interest in this form of treatment dated from a visit to the Mayo Clinic two years ago, when he had had an opportunity of seeing the work in progress and of hearing the opinions of some of Dr. Simpson's distinguished collaborators. The remarkable and consistent results which had been obtained in the treatment of urethral and metastatic gonorrhœa were to his mind of outstanding importance in view of the inadequacy of the time-honoured therapeutic methods still in vogue, and offered a hope for the future solution of a most urgent and serious problem.

He had been pleased to hear Dr. Simpson state that he thought there was some factor in this treatment in addition to the direct effect of heat upon the gonococcus. The work of Dr. Carpenter and his colleagues provided an accurate gauge of this lethal effect *in vitro*; but it remained open to question whether the gonococcus was equally susceptible in its natural habitat.

He hoped that Dr. Simpson's paper would act as a stimulus to the inception of similar work in this country.

DR. KERR RUSSELL said that at the National Temperance Hospital they had had a year's experience of electropyrexia treatment. They first acquired a condenser plate apparatus using ultra-short waves of 12 metres with an output of over 1,000 watts, but a number of burns occurred. More recently three *Inductotherm* apparatuses had been installed and they had been satisfactory; but they had one disadvantage, namely, that the time taken

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to raise the temperature to  $105^{\circ}$  or  $106^{\circ}$  F. had been 2 to  $2\frac{1}{2}$  hours. He therefore felt envious of Dr. Simpson with his Kettering Hypertherms and his ability to reach the required temperature in so short a time as half an hour.

COL. HARRISON said that although the time was very short he could not miss this opportunity of congratulating Dr. Simpson, not only on his most interesting address of that evening, but on the work which had led up to it. It required very little imagination to realise the immense possibilities of this form of treatment, and he was sure that in the coming years the world would accord to Dr. Simpson and his colleagues the credit of having made an outstanding advance in the treatment of a very difficult disease. He had been particularly attracted by Dr. Simpson's reference to the modified pyrexia treatment in which he judged that the development of an immunity seemed to play some part in the successful results. It reminded him that Pasteur in his earliest work on vaccine therapy used living micro-organisms which had been reduced in virulence by being grown at temperatures considerably higher than their optimum. He was referring particularly, of course, to anthrax. Perhaps in the case of the gonococcus infecting a patient subjected to some degree of pyrexia the virulence of the micro-organism was reduced, and it was thereby placed at a disadvantage *vis-à-vis* the patient's tissues.

DR. SIMPSON, in reply, expressed his thanks to Dr. Davies, Mr. King, Dr. Russell and Colonel Harrison, and the President, too, for their kind remarks. As Dr. Anwyl-Davies had said, when a patient had a generalised infection it seemed illogical to expect favourable results from the mere application of local heat. The human body is a very efficient radiator. If heat is applied at only one area of the body it is soon dissipated by the circulating blood, so that the general temperature is not appreciably influenced. By utilising some of the newer methods for the application of high frequency electric currents it is quite probable that favourable results may be achieved by local heat in cases of simple uncomplicated gonococcic urethritis.

If Dr. Davies had written to him in regard to the apparatus known as the Kettering Hypertherm, he probably had received an evasive reply! That was

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done deliberately, because the apparatus is not available for sale on the open market. The possibilities for quackery and charlatanism in this field of medical work were very great. In the hands of unskilled or unscrupulous people this form of therapy is not without considerable hazard. It was explained that the plan for the distribution of the apparatus contemplates the leasing of the machines by the Corporation to selected institutions which would fulfill certain qualifications and conditions. The first was that the physicians and nurse-technicians shall have received adequate training at one of ten medical centres in the United States at which the work was in progress. In regard to this country, that would hold until the personnel of some medical centre in England was qualified to give the training to other institutions.

The need for research in this field was enormous. Little fundamental information was yet available regarding the physiologic responses to fever and its influence upon immune reactions. The field was wide open for any who cared to devote their energies and their ingenuity to it.